AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A ~~device~~ channel sleeve for a plasma processing chamber comprising:

a one-piece outer portion configured for insertion into an aperture through a wall of ~~a~~ the plasma processing chamber, said one-piece outer portion consisting of an electrically insulative material and having dimensions effective to prevent or inhibit plasma arcing to an electrically conductive surface of said wall of said plasma processing chamber exposed by said aperture through said wall of said plasma processing chamber, said one-piece outer portion further comprising:

(i) a flange section ~~configured to remain~~ having a dimension greater than a corresponding dimension of said aperture, such that said flange section contacts a portion of an outside surface of said wall surrounding said aperture when said channel sleeve is inserted in said aperture through said wall of said plasma processing chamber ~~wall~~;

(ii) a lower section having a shape ~~approximate~~ and dimensions approximately the same as a corresponding shape and dimensions of said aperture, wherein said lower section is configured to fit securely into said aperture; and

(iii) an inner opening communicating through the electrically insulative material between a bottom and a top of the

outer portion, wherein said inner opening transfers a spectroscopic endpoint detection signal.

2. (CURRENTLY AMENDED) A plasma processing chamber having:

at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, and

the ~~device~~ channel sleeve of Claim 1~~,~~ inserted into the at least one aperture.

3. (CURRENTLY AMENDED) A method of making a plasma processing chamber, the chamber having at least one aperture therein, the at least one aperture having an exposed electrically conductive surface, the method comprising inserting the ~~device~~ channel sleeve of Claim 1 into the at least one aperture.

4. (CURRENTLY AMENDED) A method of processing a workpiece, comprising the following steps:

(A) exposing the workpiece to a plasma in the plasma processing chamber of Claim 2; and

(B) transmitting ~~a~~ the spectroscopic endpoint detection signal through the ~~device~~ channel sleeve out from the plasma processing chamber.

5. (CURRENTLY AMENDED) A plasma processing chamber having:

a wall;

at least one aperture through said wall, the at least one aperture having an exposed electrically conductive surface of said wall, and

a one-piece sleeve configured for insertion into the aperture, the one-piece sleeve consisting of an electrically insulative material and having:

(i) dimensions effective to prevent or inhibit plasma arcing to the exposed electrically conductive surface of the wall;

(ii) a flange section ~~configured to remain~~ having a dimension greater than a corresponding dimension of said aperture, such that said flange section contacts a portion of an outside surface of said wall surrounding said aperture when said one-piece sleeve is inserted in said aperture;

(iii) a lower section having a shape ~~approximate~~ and dimensions approximately the same as a corresponding shape and dimensions of said aperture, wherein said lower section is configured to fit securely into said aperture; and

(iv) an inner opening communicating through the electrically insulative material from a bottom to a top of the one-

piece sleeve, wherein said inner opening transfers a spectroscopic endpoint detection signal.

6. (CURRENTLY AMENDED) A method of making a plasma processing chamber having a wall, the method comprising:

(A) forming at least one aperture through said wall, the at least one aperture having an exposed electrically conductive surface of said wall; and

(B) inserting a one-piece sleeve into the aperture, the one-piece sleeve consisting of an electrically insulative material and having:

(i) dimensions effective to prevent or inhibit plasma arcing to the exposed electrically conductive surface of the wall;

(ii) a flange section ~~configured to remain~~ having a dimension greater than a corresponding dimension of said aperture, such that said flange section contacts a portion of an outside surface of said wall surrounding said aperture when said one-piece sleeve is inserted in said aperture;

(iii) a lower section having a shape ~~approximate~~ and dimensions approximately the same as a corresponding shape and dimensions of said aperture, wherein said lower section is configured to fit securely into said aperture; and

(iv) an inner opening communicating through the electrically insulative material from a bottom to a top of the one-piece sleeve, wherein said inner opening transfers a spectroscopic endpoint detection signal.

7. (PREVIOUSLY PRESENTED) The method of Claim 6, further comprising, prior to inserting said one-piece sleeve, the step of forming said bottom of said one-piece sleeve to a plane having a non-orthogonal angle relative to said inner opening.

8. (CURRENTLY AMENDED) A method of processing a workpiece, comprising:

(A) exposing the workpiece to a plasma in a chamber, the chamber having (1) a wall, (2) an aperture through said wall, said aperture having an exposed electrically conductive surface of said wall, and (3) a one-piece sleeve inserted into the aperture, the one-piece sleeve consisting of an electrically insulative material and having:

(i) dimensions effective to prevent or inhibit plasma arcing to the exposed electrically conductive surface of the wall,

(ii) a flange section ~~configured to remain~~ having a dimension greater than a corresponding dimension of said aperture, such that said flange section contacts a portion of an outside

surface of said wall surrounding said aperture when said one-piece sleeve is inserted in said aperture;

(iii) a lower section having a shape ~~approximate~~ and dimensions approximately the same as a corresponding shape and dimensions of said aperture, wherein said lower section is configured to fit securely into said aperture; and

(iv) an inner opening communicating through the electrically insulative material from a bottom to a top of the one-piece sleeve, wherein said inner opening transfers a spectroscopic endpoint detection signal; and

(B) transmitting ~~a~~ the spectroscopic endpoint detection signal to outside the chamber through the one-piece sleeve ~~out from the chamber~~.

9. (CURRENTLY AMENDED) A method of operating a plasma processing chamber, wherein the chamber has at least one aperture therein and the aperture has an exposed electrically conductive surface, the method comprising the steps of:

(A) initiating a plasma in the chamber, the aperture having the ~~device of~~ channel sleeve according to Claim 1 therein, then

(B) cleaning the chamber and the ~~device~~ channel sleeve.

10. (ORIGINAL) The method of Claim 9, wherein said plasma exists in said chamber for a predetermined period of time.

11. (CURRENTLY AMENDED) The method of Claim 9, further comprising, prior to step B, the steps of:

exposing a workpiece to the plasma, ~~and~~ wherein said ~~transmitting a~~ spectroscopic endpoint detection signal through the ~~device, said spectroscopic signal indicating~~ inner opening of said channel sleeve indicates an etching endpoint.

12. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 1, wherein

said flange section has a width that is greater than a corresponding width of said aperture.

13. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 12, wherein said ~~device~~ channel sleeve applies a predetermined amount of pressure against an inner wall of said aperture.

14. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 12, wherein said lower section has a first length and said flange section has a second length.

15. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 14, wherein said first length is greater than a length of said aperture.

16. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 1, wherein an outer surface of said ~~device~~ channel sleeve forms an angle with reference to the bottom of said ~~device~~ channel sleeve.

17. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 16, wherein said angle is non-orthogonal.

18. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 1, wherein said inner opening transfers ~~a~~ said spectroscopic endpoint detection signal without attenuation.

19. (CURRENTLY AMENDED) The plasma processing chamber of claim 2, wherein said at least one aperture comprises an endpoint detection channel of an upper chamber of a plasma etching apparatus.

20. (CURRENTLY AMENDED) The ~~device~~ channel sleeve according to claim 1, wherein the electrically insulative material is selected from the group consisting of ceramics, multi-crystal

ceramics, polyvinyl polymers, polytetrafluoroethylene, polyethylene, polypropylene, polyimides, polycarbonates and single crystal insulative minerals.